



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/530,027

09/22/2005

Minoru Senga

268885US0PCT

5389

22850 7590 05/08/2007
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

BOYKIN, TERRESSA M

ART UNIT

PAPER NUMBER

1711

NOTIFICATION DATE

DELIVERY MODE

05/08/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary

Application No.

10/530,027

Applicant(s)

SENGA ET AL.

Examiner

Terressa M. Boykin

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4-4-5 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/05,4/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- 4 are rejected under 35 U.S.C. 102(b) as being anticipated by USP 5247063 see abstract, cols. 1- 4; or USP 3707528 see abstract, cols. 1- 2; or USP 5898061 see abstract, cols. 1- 6.

USP 5898061 discloses a method for producing polyarylene sulfide continuously, comprising; 1) polymerization step wherein polyarylene sulfide is polymerized from a sulfur compound in the liquid or gas state and a dihalogenated aromatic compound in non-protonic organic solvent, 2) separation step wherein mixture of the polymerization solution and the washing solution is separated into the polymer phase and the solvent phase, and in said separation step said polymer phase is continuously taken out in the liquid state. The method of this invention makes it possible to produce polyarylene sulfide of high purity that it is suitable for molding and injection molding of the seat, the film, the fiber, etc. for the electronic and electric material field etc., with high-molecular-weight and low content of by-products, efficiently and economically.

USP 5247063 discloses a process for the purification of optionally branched polyarylene sulphides (PPS). Polyarylene sulphides which have been purified according to the invention are distinguished by the reduced amount of ash-forming impurities contained in them.

Art Unit: 1711

Specifically, the reference discloses a process for preparing purified polyarylene sulfides with removal of ash-forming impurities, comprising:

- a) preparing a polyarylene sulfide reaction mixture by the reaction of dihalogenated aromatic compounds, tri- or tetra-halogenated aromatic compounds, and alkali metal sulfides in the presence of an organic solvent and water;
- b) filtering or extracting the reaction mixture to a solids content of 15% to 35%; and
- c) demisting the reaction mixture under pressure of 5 to 400 bar with simultaneous application of shearing forces by means of belts or rollers to a solids content of 40 to 95%.

USP 3707528 discloses:

An economically improved method for recovery of poly(arylene sulfide) substantially free of impurities and organic polar diluent from a reaction slurry of poly(arylene sulfide) solid polymer particles, organic polar diluent, by-product alkali metal halide, and other impurities is provided by the atmospheric adiabatic evaporation of organic polar diluent from a reaction slurry of high sensible heat content prior to processing poly(arylene sulfide) solid polymer particles to remove other impurities.

Specifically, the reference discloses a method for the recovery of the polar org. diluent (I) used in poly (arylene sulphide (II) and for obtaining pure (I) from the reaction slurry containing (I), (II), alkali metal halide and other impurities in which (a) the initial reaction is carried out at high enough pressures (200-400 psi) and temps. (500 degrees-850 degrees F) to yield a slurry of high enough sensible heat content such that reduction of pressured to atm. adiabatically flashes off $\geq 75\%$ (I) which is recovered, (b) the flashed slurry residue is stirred and contacted with inert gas heated to temp. $>$ vaporization point of (I) and recovering (I) from this gaseous medium and (c) slurring

Art Unit: 1711

the residue with water to dissolve alkali metal halides and filtering and repeating this process until filter cake contains $\leq 1\%$ ash and drying.

The reference discloses a polyarylene sulfide prepared from the same components as claimed by applicants. Applicants' claim 1 is so broadly set forth that the claim continues to be interpreted by the Examiner as anticipated by the references while remaining within the scope of the specification.

Note that a process should at least recite all clear, active steps and any process parameters necessitated by the specification so that the claim will "clearly set out and circumscribe a particular area with a reasonable degree of precision and particularity, In re Moore, 169 USPQ 236, and make it clear what subject matter the claim encompasses, as well as make clear the subject matter from others would be precluded. In re Hammack 166 USPQ 204.

Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

**It would be beneficial and helpful for the applicants in order to expedite the prosecution of the case to be in position of allowability by using language from the specification or drawn directly from the examples of the specification that would clearly and further specify the claimed language without, of course, unfairly limiting applicants intended invention.*

Correspondence

Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site (www.uspto.gov <<http://www.uspto.gov>>), from the Office of Public Records and from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at <<http://www.uspto.gov/ebc/index.html>> or 1-866-217-9197.

Art Unit: 1711

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tmb


Examiner Terressa Boykin
Primary Examiner
Art Unit 1711